

h/t

Please add the following claims:

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1 ~~4.~~ The method of claim 1 wherein the establishing step
2 includes mixing PAM and water in a ratio of about 1 part PAM to
3 between about 500 and about 5000 parts water by volume;
4 additionally comprising the step of determining a number of
5 times that the mixture of the uniform mixture ratio needs to be
6 applied to the land area to achieve the calculated total application
7 rate of the PAM;
8 wherein the applying step comprises making a series of
9 applications of the mixture to the surface for a number of times
10 until the application rate for the soil of the land area is achieved;
11 wherein the applying step includes misting a portion of the
12 total application rate of the mixture onto the surface of the land
13 area to produce a tack coat for initially stabilizing topmost soil
14 particles on the top surface of the land area against soil particle
15 movement caused by subsequent mixture applications;
16 wherein the applying step includes continuing to apply the
17 mixture to the surface of the soil until the soil of the land area
18 becomes saturated and stopping the application of the mixture top
19 surface becomes saturated;
20 additionally comprising detecting saturation of the soil when
21 the mixture accumulates on the surface rather than being absorbed
22 into the ground and the mixture on the top surface reflects ambient
23 light;
24 wherein the applying step includes waiting for a time period
25 after detection of saturation such that the mixture is able to
26 penetrate the ground below the surface, wherein the time period
27 comprises the time required for any puddles of the mixture on the
28 top surface of the soil to be absorbed into the soil below the top
29 surface;

30 wherein the waiting step is conducted for a time period that is
31 less than the time required for the top surface of the soil to dry;

32 wherein the applying step includes the step of directing a
33 spray of the mixture onto the top surface of the soil of the land area
34 from at least four directions, each of the directions being oriented
35 at about 90 degrees to at least two of the other directions;

36 wherein the applying step includes the step of directing a
37 spray of the mixture at a substantially perpendicular angle
38 downward onto the top surface of the soil of the land area;

39 additionally comprising testing the extent of penetration of the
40 PAM below the top surface of the soil of the land area; and

41 wherein the testing step includes removing a core sample of
42 the soil from the land area.

1 ¹⁸~~45~~. The method of claim ¹⁷~~44~~ additionally comprising the step
2 of comparing the depth penetration of the PAM below the top
3 surface of the soil of the land area to a set of minimum depth
4 penetration values based upon the general slope of the land area to
5 determine the minimum depth penetration needed for the land area
6 being treated before terminating application of the mixture to the
7 land area;

8 wherein if the general slope of the land area is between
9 substantially level and a general slope of 4 to 1, inclusive, the
10 sufficient depth penetration is a minimum of about 1.3 inches;

11 wherein if the general slope of the land area is about 3 to 1,
12 the sufficient depth penetration is a minimum of about 1.5 inches;

13 wherein if the general slope of the land area is about 2 to 1,
14 the sufficient depth penetration is a minimum of about 2 inches;

15 wherein if the general slope of the land area is about 1.5 to 1,
16 the sufficient depth penetration is a minimum of about 2.5 inches;

17 wherein if the general slope of the land area is about 1 to 1 or

18 steeper, the sufficient depth penetration is a minimum of about 3
19 inches; and

20 additionally comprising exceeding the total application rate
21 calculated if the sufficient minimum depth penetration is not
22 achieved through application of mixture to the soil at the total
23 application rate.

344 1 36. The method of claim 17 additionally comprising the step
2 of determining a number of times that the mixture of the uniform
3 mixture ratio needs to be applied to the land area to achieve the
4 calculated total application rate of the PAM;

5 wherein the applying step comprises making a series of
6 applications of the mixture to the soil according to the number of
7 times determined to achieve the total application rate for the soil of
8 the land area;

9 wherein the applying step includes continuing to apply the
10 mixture to the surface of the soil until the soil of the land area
11 becomes saturated and stopping the application of the mixture top
12 surface becomes saturated;

13 additionally comprising detecting saturation of the soil when
14 the mixture accumulates on the surface rather than being absorbed
15 into the ground and the mixture on the top surface reflects ambient
16 light;

17 wherein the applying step includes the step of directing a
18 spray of the mixture onto the top surface of the soil of the land area
19 from at least four directions;

20 wherein the applying step includes waiting for a time period
21 after detection of saturation such that the mixture is able to
22 penetrate the ground below the surface, wherein the time period
23 comprises the time required for any puddles of the mixture on the
24 top surface of the soil to be absorbed into the soil below the top

25 surface;
26 wherein the waiting step is conducted for a time period that is
27 less than the time required for the top surface of the soil to dry;
28 additionally comprising testing the extent of penetration of the
29 PAM below the top surface of the soil of the land area;
30 wherein the testing step includes removing a core sample of
31 the soil from the land area;
32 additionally comprising the step of terminating the application
33 of the mixture when PAM penetrates below a top surface of the soil;
34 additionally comprising comparing the depth penetration of
35 the PAM below the top surface of the soil of the land area to a set
36 of minimum depth penetration values based upon the general slope
37 of the land area to determine the minimum depth penetration needed
38 for the land area being treated before terminating application of the
39 mixture to the land area; and
40 additionally comprising the step of considering the relative
41 compaction of the soil of the land area, and increasing a number of
42 times of applications of the mixture if the top surface of the soil of
43 the land area has a compacted crust for loosening the compaction of
44 the soil to enhance the penetration of subsequent applications of the
45 mixture into the soil.

33 34
1 47. The method of claim 46 wherein the establishing step
2 includes mixing PAM and water in a ratio of about 1 part PAM to
3 between about 500 and about 5000 parts water by volume;
4 wherein if the general slope of the land area is between
5 substantially level and a general slope of 4 to 1, inclusive, the
6 sufficient depth penetration is a minimum of about 1.3 inches;
7 wherein if the general slope of the land area is about 3 to 1,
8 the sufficient depth penetration is a minimum of about 1.5 inches;
9 wherein if the general slope of the land area is about 2 to 1,

10 the sufficient depth penetration is a minimum of about 2 inches;
11 wherein if the general slope of the land area is about 1.5 to 1,
12 the sufficient depth penetration is a minimum of about 2.5 inches;
13 and
14 wherein if the general slope of the land area is about 1 to 1 or
15 steeper, the sufficient depth penetration is a minimum of about 3
16 inches.
